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## **The male of *Eusynthemis tenera* THEISCHINGER (Odonata: Synthemistidae)**

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**A b s t r a c t :** The male of *Eusynthemis tenera* THEISCHINGER is described. The species is compared with all known Australian *Eusynthemis* species, particularly with its closest ally, *E. barbarae* (MOULDS).

**Key words :** *Eusynthemis tenera*, male (description).

### **Introduction**

*Eusynthemis tenera* was known from a unique female, collected 1967 at Myee Creek, 2100 ft, Palmerston National Park, Queensland (THEISCHINGER 1995). The male remained unknown until recently when Dr S. Dunkle (USA) gave me the opportunity to study the material he had collected in Australia from September to December 1999. This material included a male *Eusynthemis* corresponding so well with the female of *E. tenera* that it is considered to be the male of that species. It is described below (terminology following CHAO (1953) and WATSON & O'FARRELL (1991)).

### **Description**

#### ***Eusynthemis tenera* THEISCHINGER**

*Eusynthemis tenera* THEISCHINGER 1995: 305; 1998a: 145; 1998b: 150.

**M a l e** (Figs 1-3)

**D i m e n s i o n s :** Hindwing 30.5 mm; abdomen 34.8 mm.

**H e a d :** Labium including lateral lobes uniformly yellow; mandibles greyish- to blackish brown; labrum black; anteclypeus largely greenish yellow, greyish brown along lateral and dorsal margins; postclypeus largely pale bluish green, a small subtriangular patch each side along dorsal margin close to midline and mesal corner of latero-ventral lobes blackish brown, ventral and dorsal margins narrowly greyish brown; anterior frons largely pale green, narrowly brown along ventral margin, top of frons brownish black; vertex and antennae black; occiput largely black on top, a small greyish yellow patch behind; postgenae black with large yellow lateral patch; compound eyes dark brown in preserved specimen.



**Photo 1:** *Eusynthemis tenera* THEISCHINGER, male (Photo S. Dunkle)

**Cervix and Prothorax:** Dorsal portion of eucervicale black and yellow, ventral portion largely brownish yellow; postcervicale greyish yellow; pronotum largely greyish- to brownish black except for anterior lobe which is yellow and a brown streak each side on median lobe; epimeron and episternum greyish- to blackish brown; coxa and trochanter largely greyish yellow; basal portion of femur greyish yellow, remainder black; tibia, tarsus and claws black; tibial keel grey, about 45% of tibial length.

**Synthorax:** Spiracular dorsum, mesostigmatic lamina and collar black; dorsal carina yellow; antealar ridge and sinus black; front of synthorax and mesokatepisternum black; mesopostcoxa yellowish grey; mesepimeron and metepisternum black with long and rather wide yellow stripe in front of and engulfing metathoracic spiracle; dorsal lobe of metanepisternum largely black; metepimeron black with rather straight and narrow yellow stripe posteriorly from near subalar ridge to near metapleural suture; metapostepimeron yellow; metapostcoxa yellowish grey; metapoststernum greyish brown; terga blackish brown except for yellow central portion of mesopostscutellum and for yellowish grey metapostscutellum; coxae yellowish grey to greyish brown; trochanters brownish black; femora, tibiae, tarsi and claws black; tibial keels grey, ca 38% length of mesotibia, ca 48% of metatibia.

**Wings:** Membrane hyaline, very slightly suffused with greyish- to greenish brown; veins black; axillary, humeral and intermediary plates black; antenodals 15-16/10; postnodals 10/11-12; Ax1, Ax3 and Ax5 in forewing and, beginning from Ax1, every second antenodal in hindwing distinctly thickened; other antenodals of first and second series

mostly coinciding; pterostigma black, overlying 3 crossveins; sectors of arculus with long stalk; triangle of both wings free, subtriangle of forewing free or crossed; hypertriangle crossed by 1 vein in both wings; discoidal field of forewing with two cells adjacent to triangle then 1 cell wide for 5 cells, broadening to 10-11 cells at wing margin; discoidal field of hindwing starting with 1 or 2 rows of cells for a few cells, then broadening strongly to 9-10 cell at wing margin; 3-5 bridge crossveins; 3 crossveins in basal space of both wings; 5-7 cubito-anal crossveins; anal loop of 9-10 cells, 4 cells wide, 2 cells deep; anal triangle of 2 cells; anal angle well developed; membranule pale grey in both wings.

**A b d o m e n :** Subcylindrical, with segments 1 and 2 and 7-10 slightly expanded. Largely brownish black to black; auricles yellowish grey on top, yellow and with black scales below; a small yellow patch each side along supplementary transverse carina of terga 2 and 3 and at the base of terga 3 and 4; extreme ventral margin of more anterior terga pale to dull yellow. Secondary genitalia brown, black and yellow; penile cornua forked into two straight prongs; genital hamules with apical portion strongly developed. Anal appendages black; superiors long sausage-shaped with basal 1/5 slightly widened and bearing a distinct laterally pointing tooth at the end of dilatation; inferior appendage rather narrow, shallow, about ¾ length of superiors, apex truncate and bearing two small teeth each side.

**M a t e r i a l   e x a m i n e d :** 1♂, Queensland, second stream S of Barron River on Kennedy Highway, S of Hypipamee National Park, small rainforest stream, 23.10.1999, S. Dunkle (in Coll. G. Theischinger).

## Discussion

*Eusynthemis tenera* is very closely related to *E. barbarae* which was described as a *Choristhemis* by MOULDS (1985). Only in these two *Eusynthemis* species are the male anal appendages markedly longer than the width of segment 10. Black intermediary plates suggest that they belong to the *E. guttata* group of species. *E. tenera* can be distinguished from *E. barbarae* by its entirely yellow labium (including the lateral lobes) and the markedly paler face. Differences between the available males of *E. tenera* (Figs 1-3) and *E. barbarae* (Figs 4-6) have also been found in the shape of the penile cornua, genital hamules and anal appendages.

It appears that *E. tenera* has a wider and more southern distribution in tropical Queensland, whereas *E. barbarae* could be restricted to the Mt Lewis area.

## Acknowledgments

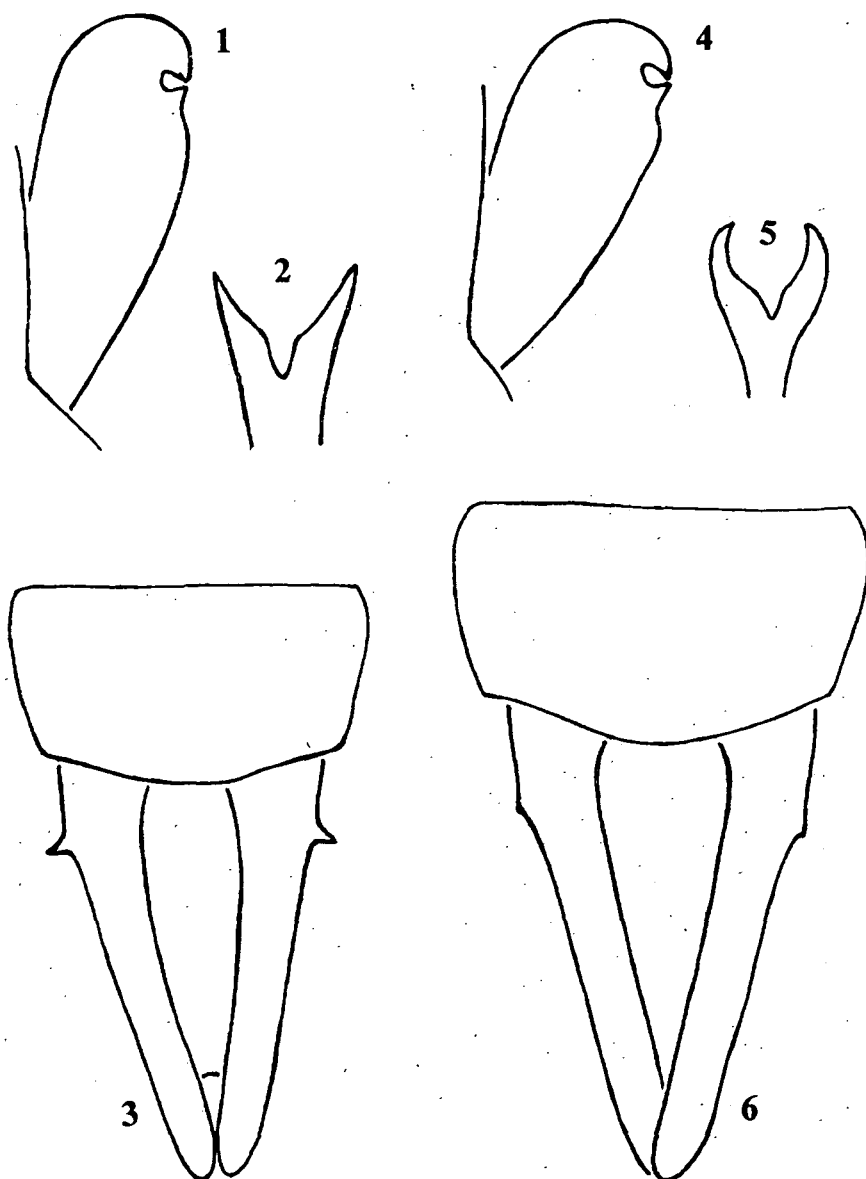
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**Figs 1-3.** *Eusynthemis tenera* THEISCHINGER, male: 1 – penile cornua, ventral aspect; 2 – right genital hamulus, ventral aspect; 3 – anal appendages, dorsal aspect. **Figs 4-6.** *Eusynthemis barbarae* (MOULDS), male: 4 – penile cornua, ventral aspect; 5 – right genital hamulus, ventral aspect; 6 – anal appendages, dorsal aspect.